FAMILY LYCEUM.

PUBLISHED WEEKLY, AT THE LYCEUM PRESS, No. 3, CORNHILL, BY GEORGE W. LIGHT & Co.

VOL. I. BOSTON, SATURDAY, JANUARY 26, 1833. No. 24.

FAMILY LYCEUM.

JOSIAH HOLBROOK, EDITOR.

TERMS: Two dollars a year, in advance. Six copies for ten dollars.

BIOGRAPHY.

ARISTOTLE.

ARISTOTLE, the chief of the peripatetic philosophers, born at Stagyra, a small city of Macedon, about 384 years before the birth of Christ. He was the son of Nicomachus, physician to Amyntas, the grandfather of Alexander the Great. He lost his parents in his infancy; and Proxenes, a friend of his father, who had the care of his education, taking but little notice of him, he quitted his studies, and gave himself up to the follies of youth. After he had spent most of his patrimony, he entered into the army; but not succeeding in this profession, he went to Delphos, to consult the oracle what course he should follow, when he was advised to go to Athens, and study philosophy. He accordingly went thither, when about eighteen years of age, and studied under Plato till he was thirty-seven. By this time he had spent his whole fortune; and we are told that he got his living by selling powders, and some receipts in pharmacy. He followed his studies with most extraordinary diligence, so that he soon surpassed all in Plato's school. He eat little, and slept less; and, that he might not oversleep himself, Diogenes Laertius tells us, that he lay always with one hand out of the bed, having a ball of brass in it, which, by its falling into a bason of the same metal, awakened him. He had several conferences with a learned Jew at Athens, who instructed him in the sciences and religion of the Egyptians, and thereby saved him the trouble of travelling into Egypt.—When he had studied about fifteen years under Plato, he began to form different tenets from those of his master, who became highly piqued at his behavior. Upon the death of Plato he quitted Athens, and retired to Abarrya, where he married Pythias, the sister of Hermias, prince of Mysia, whom he is said to have loved so passionately, that he offered sacrifice to her. Some time after, Hermias having been taken prisoner by Meranon, the general of the Persian king, Aristotle went to Mitylene, the capital of Lesbos, where he remained till Philip, king of Macedon, having heard of his great reputation, sent for him, to be tutor to his son Alexander, then about fourteen years of age. Aristotle accepted the offer; and, in eight years, taught his royal pupil rhetoric, natural philosophy, ethics, politics, and a certain sort of philosophy, which, says Plutarch, he taught no one else. Philip erected statues in honor of Aristotle; and, for his sake, rebuilt Stagyra, which had been almost ruined by the wars. The last fourteen years of his life he spent mostly at Athens, surrounded with every assistance which men and books could afford him, for prosecuting his philosophical inquiries. The glory of Alexander's name, which then filled the world, insured tranquillity and respect to the man whom he distinguished as his friend; but, after his premature death, the invidious jealousy of priests and sophists inflamed the superstitious fury of the Athenian populace; and the same odious passions which proved fatal to the offensive virtue of Socrates, fiercely assailed the fame and merit of Aristotle. To avoid their persecution he withdrew to Chalcis, a measure sufficiently justified by a regard to personal safety; but lest his conduct should appear unmanly, when contrasted with the firmness of Socrates, he apologised for his flight, by saying that he was unwilling to afford the Athenians a second opportunity 'to sin against philosophy.' He seems to have survived his retreat from Athens only a few months; vexation and regret probably ended his days.

Besides his treatises on philosophy, he wrote also on poetry, rhetoric, law, &c., to the number of four hundred treatises, according to Diogenes Laertius. An account of such as are extant, and of those said to be lost, may be seen in Fabricius's Bibliotheca Græca. He left his writings with Theophrastus, his beloved disciple and successor in the Lyceum; and forbade that they should ever be published. Theophrastus, at his death, trusted them to Neleus, his friend and disciple; whose heirs buried them in the ground at Scepsis, a town of Troas, to secure them from the king of Pergamos, who made great search everywhere for books to adorn his library. Here they lay concealed one hundred and sixty years, until, being almost spoiled, they were sold to one Apellicon, a rich citizen of Athens. Sylla found them at this man's house, and ordered them to be carried to Rome. They were some time after purchased by Tyrannion, a grammarian; and Andronicus of Rhodes having bought them of his heirs, was the first restorer of the works of this great philosopher; for he repaired what had been decayed, and got them copied.

Many followed the doctrine of Aristotle, in the reigns of the twelve Cæsars, and their numbers increased much under Adrian and Antoninus. Alexander Aphrosophy was the first professor of the peripatetic philosophy at Rome, being appointed by the emperors, Marcus Aurelius, and Lucius Verus; and, in succeeding ages, the doctrines of Aristotle prevailed among almost all men of letters, and many commentaries were written upon his works. The first doctors of the church disapproved of the doctrine of Aristotle, as allowing too much to reason and sense; but Anatolius, bishop of Laodicea, Didymus of Alexandria, St. Jerome, St. Augustin, and several others, at last wrote and spoke in favor of it. In the sixth century, Boethius made it known in the east, and translated some of his pieces into Latin. But from the time of Boethius to the eighth century, Joannes Damascenus was the only man who made an abridgement of his philosophy, or wrote any thing concerning him. The Grecians, who took great pains to restore learning in the eleventh and following centuries, deeply studied the works of this philosopher, and many learned men wrote commentaries on his writings; amongst these were Alfaragius, Algazel, Avicenna, and Averroes. They taught his doctrine in Africa, and at Cordova in Spain. The Spaniards introduced it into France, with the commentaries of the Averroes and Avicenna; and it was taught in the university of Paris, until Amauri, having supported some particular tenets on the principles of this philosopher, was condemned of heresy, by a council held there in 1210, when all the works of Aristotle that could be found were burnt, and the reading of them forbidden, under pain of excommunication. This prohibition was confirmed, as to physics and metaphysics, in 1215, by the pope's legate; though, at the same time, he gave leave for his logic to be read, instead of St. Augustin's, used at that time in the university. In 1265, Simon, cardinal of St. Cecil, and legate from the holy see, prohibited the reading of the physics and metaphysics of Aristotle. All these prohibitions, however, were taken off in 1366; for the cardinals of St. Mark and St. Martin, who were deputed by pope Urban V. to reform the university of Paris, permitted the reading of those books which had been prohibited; and pope Stephen approved of all his works, and procured a new translation of them. The first edition of Aristotle's works was in Latin, by Averroes, Venice, 1472, 4 vols. folio; but the editio princeps in Greek is that of Aldus, 6 vols. folio, 1495. The best subsequent editions are those of Casaubon, 1590, 2 vols. folio; Lugd. and Duval, 4 vols. folio, Par. 1629.—The late Mr. Pye has translated the Poetics into English, 8vo., 1788; and Mr. Twining published another in 1789, 4to. The treatise on government has been translated by Mr. Ellis, 4to., 1778, and Dr. Gillies has translated 'Aristotle's Ethics and Politics.'—[*Platt's Universal Biography.*

MOTION OF THE BLOOD IN THE ARTERIES.

THE contractions of the heart inject the blood into the arteries with a force maintaining such a tension in them, that according to the interesting experiments of Dr. Hales, recorded in his *Statical Essays*, if any artery of a large animal like a horse, be made to communicate with an upright tube, the blood will ascend in the tube to a height of about ten feet above the level of the heart, and will there continue, rising and falling a few inches with each pulsation of the heart. Now a column of *ten* feet, indicates a pressure of about *four and a half* pounds on a square inch of surface: this, therefore, is the force of the heart urging the blood along the arteries into the veins. The opposing tension of the veins is much less, because the blood readily escapes from them into the heart: Hales found that in a tube communicating with a vein, the blood stood only a few inches higher than the level of the heart. In small animals he ascertained the tension of artery and vein to be less than in large ones; and the ratios deduced for the human body, under ordinary circumstances, were eight feet column, or nearly four pounds per inch for the arteries: and half a foot column, or a quarter of a pound per inch for the veins.

Arteries examined after death are found to consist of, 1st., an outer coat of strong *elastic substance*; 2d., a middle coat of *circular fibres*; and 3d., an inner coat of *smooth lining membrane*. Their elasticity or power of resisting change of dimension, and of returning to a middle state from either dilatation or compression, because remaining in the dead artery, was the most obvious property, and was that first attended to. Minute observation of the phenomena of life has since determined the following facts, proving and illustrating a contractility resident in the fibrous coat.

1. A small living artery, cut across, soon contracts so as to close its canal, and arrest hemorrhage.

2. While an animal is bleeding to death, the arteries accommodating themselves to the decreasing quantity of blood, contract far beyond the degree to which their simple elasticity would carry them; and they relax again after death. Dr. Hales took seventeen quarts of blood from a horse before it died, in whose body only three quarts more were found altogether, and yet the moment before death the tension of the arteries sustained a column of two feet of blood in his experimental tube.

3. The artery of a living animal, if exposed by dissection to the air, sometimes will contract in a few minutes to a great degree: and in such a case, only a single fibre of the artery may be affected, narrowing the channel like a thread tied round it.

4. When a living artery is tied, the part between the ligature and the nearest branch on the side of the heart gradually contracts, and becomes at last a solid or impervious cord.

Fluctuation in the vital action of parts, is often attended with sudden increase or diminution of caliber in the arteries concerned.

Although these facts prove indubitably a contractility in the coats of arteries distinct from their elasticity, still, because the circular fibres do not resemble common muscles in color or in chemical composition, or in being immediately obedient to the stimuli of electricity, pricking, great heat, &c., their contractility was by many persons for a long time denied. The dispute, however, was often more about the words *contractility* and *muscularity*, than about facts.

The pulse in the arteries, chiefly as regards its almost instantaneous occurrence over the whole system, in all states of arterial dilatation, and its great strength and sharpness in very small and remote branches, points also to the active contractility of the arterial coats: for,

1. Were the arterial tree in the living body a system of tubes as readily admitting of farther dilatation as in the dead body, the first part or trunk would effect the motion of the blood beyond it, nearly as the *air-vessel* placed at the commencement of artificial arrangements of water-pipes affects the motion of the water in them;—that is to say, as this converts the sudden and interrupted jets of water from pumps of *fire-engines, town-supplying pipes*, &c. into a uniform stream with scarcely a remnant of shock, so, in the arterial branches, the simple elasticity would cause a more tranquil flow and a quieter beat than that bounding pulse of life felt in the remote artery of the wrist, as sensibly, in proportion, as near the heart itself.

2. Were the pulse a wave advancing in tubes that yielded as readily as the dead arteries in their middle states of dilatation, it would be very distinctly progressive from the heart to the extremities; but it is felt so instantly over the whole body, as to be compared commonly to a shock of electricity.

3. A pulse may be produced artificially in the arteries of a body recently dead, by filling them with water to the tension of life, and then injecting at intervals, by a syringe, as much water as the heart throws of blood at a pulse: but although the artery is then distended nearly to the limit of its dilatability, and is therefore rendered rigid, the beats are very different from those of the living pulse. A similar experiment, tried by connecting the artery of a dead animal with the corresponding artery of a living one, has a similar result.

4. A tube, extensively elastic, that it might convey a wave of liquid with a velocity approaching to that of the pulse, would require to be so tense, from fullness, as to be discernible always by the touch, through any imbedding medium such as flesh, like a hard cylinder or cord; and it would be acting constantly as a spring tending to straighten itself, and therefore would be stiffening the parts through which it passed. Now the living arteries, between their pulsations, are almost as soft and compressible as the surrounding flesh, and offer no perceivable opposition to bending, in any movement of the parts.—This may be verified by examination of the lips, for instance, or of the fingers; but when a person sits cross-legged, the well-known shaking of the suspended foot, in unison with the pulse, shows the recurring efforts of the artery to straighten itself, during the movements of greater tension.

5. A bulky wave in elastic vessels would have to recoil from the extremities, or pass through them as a gush: and the recoil would be particularly observable near the ligature of a tied artery: but examination has not detected such effects in the living body. The tying of an artery *beyond* an aneurismal tumour, if it checked a strong wave, would almost certainly produce bursting; yet Mr. Wardrope and others have lately performed this operation with successful issue.

6. The wave would be more interrupted by the bandage in the operation of bleeding, than the living pulse is.

7. The pulse of a paralytic limb often seems more affected than mere change of size in the artery will account for. The same is true, in an opposite way, of the pulse in an artery leading to an inflamed part.

8. If the abdomen of a living animal be opened, the mesenteric artery, in all its ramifications, is seen stiffened and raised up suddenly with every pulsation, in a manner which the spreading of newly received blood in a very yielding vessel ill accounts for.

9. In the interesting experiments of *Bichat, Parry*, and others, to ascertain the exact extent of the supposed dilatation and contraction of arteries during a pulse, not the slightest degree of either was discernible, even when sought for with microscopes.

To explain these and other phenomena, then, it seems necessary to admit, as occurring throughout the whole body, and almost simultaneously with the contraction of the heart itself, such an action of the contractile fibres of the arteries, as to modify their natural elasticity, and to render them rigid enough, in all degrees of dilatation, for the heart to produce its effects through them almost as it would through tubes of metal. Dr. Young, in a paper published in the Philosophical Transactions for 1809, and characterized by the usual elegance and precision of his writings, has adduced experiments and calculations, to show that waves in elastic vessels advance more quickly than was before imagined; but the spreading of the pulse seems to be yet more rapid than his calculation anticipates. It is evident, that when arteries, in consequence of depletion, are contracted beyond the middle station of their elasticity, their tension and power of quickly conveying the pulse must be dependent altogether on the condition of their contractile fibres.

The careful experiments which could detect no change of size in the arteries during the pulse, while they disprove the ancient belief of a considerable tumefaction or wave passing along, or of a considerable filling and emptying of arteries, like what occurs in the heart, might also be supposed positively to disprove the occurrence of any general constriction of the vessels on their contents—but erroneously: for if a man's arterial system, considered as one cavity, be supposed to contain five pounds of blood (which is probably near the truth,) and if the vessels be thought to embrace their contents, even between the pulses, with force enough to have all a rounded or cylindrical form, although remaining soft and yielding to the pressure of the finger, and if we suppose their coats during the pulse, to be thrown into a sudden contraction, as if in obedience to an electrical shock, still, because blood is incompressible, and because just as much enters the arteries with every pulse as escapes from them before the next, their bulk would not sensibly diminish by the strongest conceivable action of their coats; of which action the only sensible effects would be, that the soft, yielding, and, in some places, compressed tubes would be suddenly con-

verted into hard or resisting cylinders: and that wherever, by any accidental pressure, an artery had been flattened, in regaining its cylindrical form it would strike or pulsate against the compressing body.

In any admissible view, however, of arterial action, we find that the arteries contribute to the motion of the blood, only as tubes which convey it; their tension, and therefore, the force with which the blood is pressed into the capillaries, being derived from the heart alone. Many physiologists have had a confused belief that the arteries aided actively in propelling the blood; but a very little reflection would have shown that as they have no vermicular or progressive contraction, like the intestines, they can no more *propel* the fluid within them, than any other rigid or elastic tubes. Although they are thus in no degree instrumental in the propulsion of the blood, still by more permanently enlarging or diminishing their caliber, that is by merely becoming larger or smaller conduits, they may much influence its distribution, and the speed of its transmission.—[*Arnott's Philosophy.*

Lyceum Schools.

In a conversation just held with a Representative from a small town in the interior of the state, on the subject of *Weekly Schools*, we were gratified with the entire confidence he expressed in the feasibility and the importance of the plan; and still more with the determination he expressed of carrying it into effect among his neighbors. He said it was exactly fitted to the situation of small towns with a sparse population; and with judicious management, it could not but succeed. He thought that farmers living three or four miles from the centre of a town, would esteem it a privilege to fit out their children one afternoon in a week to a place of useful instruction, from which they might bring home subjects of study and conversation during the intermediate time.

Some adults, and even married people, would probably avail themselves of such an opportunity for intellectual and social improvement. Of young people, there are hundreds and thousands, whose parents would not feel able to spare the time and money for attending a daily school, who could without inconvenience attend one half day in a week.

The gentleman above alluded to was led by the interest he felt in the subject, to propose seeing other representatives from the same neighborhood on the subject, with a view of getting some half a dozen towns to unite in the enterprize, and procure a teacher who should devote himself to their several interests.

The mighty results which might with the greatest ease be effected by the proposed system of weekly instruction, is a sufficient apology for pressing it again and again upon the attention of our readers. We have suggested the subject to citizens of the smallest towns in New England, and to those of the newest ones in the Western Valley, and we do not recollect an individual who has not acceded to the plan, and expressed an interest in it as being perfectly feasible and of the first importance. By many at the West and South, it has been said to be the only plan which can in any considerable degree meet the wants of that section of our country.

We express it as our decided opinion, that no field of usefulness, in this age of improvement and benevolence, is so vast or so feasible; that presents such an opportunity for so large a class of young men to be pleasantly and profitably employed, as this enterprise for Lyceum Schools. In New England and New York, there are over two thousand towns, nearly every one of which might and would furnish a school of the kind, if the subject was understood and proposed; and many towns would furnish one in several different villages or neighborhoods; so that at the most moderate calculation, three or four hundred teachers might find useful and profitable employment in these few states.

In the middle, western, and southern states, one might be employed in each county immediately; and in many counties, several; making a demand in those nine or ten hundred counties for two thousand.

To some, this may appear like talking large; but it is a sober fact, capable of complete demonstration; and it is believed that few ever examined the subject who did not come to the same conclusion.

In connection with this subject, we are glad of an opportunity to refer the attention of our readers to a proposal of the School Agent Society, for a meeting and a course of exercises, at the Teachers' Seminary, in Andover, in March and April next. As that is a time when most teachers, both ladies and gentlemen, are disengaged, it will present them with a most favorable opportunity to prepare to enter upon an enterprise which must and will go forward, and which we believe is destined to be one of the most efficient measures ever proposed, for enlightening and reclaiming an ignorant and fallen race of beings.

We hope that every teacher and every individual into whose hands this paper may fall, if he cannot attend that meeting himself, will make known its object and plan to some who can. There are undoubtedly hundreds, if not thousands in our country, who have already so much knowledge and experience in teaching, as to render two or three weeks attention to the proposed system of Lyceum Schools, sufficient to enable them to enter upon it with greater profit to themselves, and greater and more extended usefulness to society, than is practicable under their present situation. Those who could be prepared to engage in the plan at the time proposed for the meeting, might put themselves in the way of being prepared at some future time.

No step is more important perhaps at the outset, for carrying this enterprise into complete effect, than the organization of *County Lyceums* throughout the Union.—Such societies can, to the greatest advantage, co-operate with the School Agent Society in procuring teachers, either for daily or weekly schools, either gentlemen or ladies. The Lyceum, by making application to the Society, can procure a teacher or teachers, and when procured, it can afford them aid and patronage which they could find from no other source. How easy it would be for a County Lyceum in New England or New York, by co-operation, to establish a Lyceum School in every town within their district, as soon as teachers could be procured. How easy it would be to furnish every Town Lyceum with a cabinet of Natural History, a set of Apparatus, and even with a commodious Building, if the County Lyceum should take up the subject in earnest.

To the state of things at the west and south, County Lyceums are no less fitted, and no less necessary than in the more thickly settled parts of our country. Indeed, something of the kind, it is believed, is indispensable in new and thinly settled portions of our country, to give every child even the slighest instruction.

School Lands.

About twelve millions of acres of land are appropriated and to be appropriated in the Valley of the Mississippi to the promotion of Education. This land is divided into sections of 640 acres each, and appropriated to the benefit of the inhabitants in each township of six miles square.

In some instances this land is sold, and the avails put into a fund; in others, it is leased; and in a few it is improved, and the products appropriated to their legitimate object.

It is evident that the best appropriation which can possibly be made of this land, where it is practicable, must be in providing the means of *Lyceum Seminaries*, or self-supporting schools; and the first step to bring this about is the organization of Lyceums, especially County Lyceums.

We invite the attention of the friends of Education in the west to this subject, and would ask liberty to make the inquiry, whether it would not be expedient to organize Lyceums with special reference to the best appropriation of school lands. If the friends of Education in one county should set the example, it would be followed, almost of course, by many others.

Co-operation.

An interesting communication from the Female Seminary in Savannah, Geo., expresses a wish and a determination to do all in their power for the diffusion of knowledge, by setting good examples, and by co-operating with their young friends in other parts of the country. They have already forwarded several communications to the Abbot Female Seminary in Andover. The young ladies are evidently no nullifiers.

Several of the schools in Lynn have procured by their co-operation, cabinets of minerals, large school libraries, and a good supply of apparatus.

The pupils of Mr. John Kelly's school in Malden, a public school, have procured a library and apparatus, by their mutual contributions.

A public school in Charlestown, under the charge of a lady, were enabled, by their contributions for procuring apparatus, to contribute several dollars for the relief of the Cape De Verds.

The New York public schools, by their co-operation for each other's benefit, have been enabled to extend their efforts to the advancement of the general cause of Education in various parts of the country.

AMERICAN SCHOOL AGENT SOCIETY.

Convention of Teachers.

The Directors have ever considered meetings of the friends of education, and especially of Teachers and Education Agents, as one of the means by which the objects of their Association are to be secured. And as it is known that several individuals are designing to emigrate to the Valley of the Mississippi the ensuing spring, to be employed as teachers, it is believed that a meeting at which a system of co-operation amongst themselves and others already in the field may be adopted, would be essentially serviceable to them, as well as furnish an opportunity for conferring benefit on others employed in New England. A meeting, therefore, is proposed to be commenced at the *Seminary for Teachers*, at Andover, on the 27th of March next, and to be continued for about two weeks.

The following will be the prominent Exercises:—

I. Lectures.

1. Introductory Lecture.

2. *Three* Lectures on the condition, wants, and means of benefitting those parts of our country, suffering under a deprivation of schools, especially at the West and South.

3. *Two* Lectures on weekly, or Circuit Schools. (1.) Their necessity and practicability. (2.) Mode of conducting them.

4. *Six* Lectures on the Art of Teaching. (1.) Responsibility of Instructers. (2.) Qualifications, natural and acquired. (3.) Manner of commencing a school. (4.) Objects for which the teacher ought to labor. (5.) Government. (6.) Mode of Teaching.

5. *Two* Lectures on Apparatus. (1.) The necessity of Apparatus. (2.) Mode of most successfully employing it.

6. *Two* Lectures on Geology. (1.) Geology considered as a science. 2. Its uses, and the manner of studying it, (illustrated by specimens, drawings, geological maps, &c.

7. *Two* Lectures on Chemistry. (1.) Chemistry as a practical science. (2.) Mode of treating and manner of studying it; (with experiments.)

8. *Two* Lectures on the direction of studies, and most important branches to be pursued in common schools.

9. *One* Lecture on Astronomy, (accompanied by illuminated diagrams.)

One Lecture on the Carstairian System of Writing.

One Lecture on Electricity, (with experiments.)

One Lecture on Natural Philosophy, (with experiments.)

One Lecture on Magnetism.

One Lecture on Natural History, (with specimens.)

Lectures *may* be given on some other subjects, if it is deemed desirable at the time.

II. Other Exercises.

Daily meetings will be held, for the purpose of discussion and inquiry, conducted principally by the members of the convention. Opportunities will be furnished, for witnessing exercises in the school.

Persons, who desire it, will have the opportunity of becoming members of the American School Agent Society; and, at the close of the exercises, those can receive testimonials from the Executive Committee, who in their opinion merit the confidence of the community. And also recommendations to the Corresponding Secretaries of this society, in the several states where they design to labor. It is desirable that all those who contemplate a field of labor out of New England, and who wish to improve this opportunity to become acquainted with the designs and plans of this society, and to form an acquaintance with each other, should signify it to the Directors, previous to the first of March. Communications, free of expense, may be addressed to J. Holbrook, of Boston, or F. A. Barton, General Agent A. S. A. Society, Andover.—Convenient and frugal board will be provided for all those who may request it.

An additional Notice will be given, previous to the meeting of the Convention, containing the names of the Lecturers, and the exercises designed for each day.

Editors, friendly to the interests of Education, are respectfully requested to extend this Notice, by giving it insertion in their respective periodicals.

By order of the Ex. Com.

S. R. HALL, *Chairman.*

Teachers' Seminary, Andover, Jan 14, 1833.

Annual Temperature.

Messrs. Editors.—In some coming age, posterity will have a strong curiosity to ascertain the state of the climate and of the natural world, in the earlier periods of the country. Diseases change with the vicissitudes of nature; of course, medical science will feel a particular interest in all records of thermometrical observations. If you deem the following to possess sufficient value to be placed before the public eye, they are offered to your use.

The Thermometer, on Fahrenheit's scale, was placed in open air, in a bleak situation, in the shade of the North side of the house. The observations were taken at sunrise, and at 2 and 9 o'clock in the afternoon, of every day. This gave the mean temperature on each month as follows:

January,	25.52	July,	65.33
February,	25.90	August,	67.36
March,	35.03	September,	59.20
April,	38.39	October,	50.22
May,	51.68	November,	39.47
June,	61.44	December,	29.13

This gives, for the *Annual Temperature* of the place of observations, about 45 degrees and 72 hundredths, for 1832. Geographers estimate the general Annual Temperature of Massachusetts at 50 degrees. It will be seen that the year 1832 was an unusually *cold* one. The *coldest* day was 27th January, when the mercury, at sunrise, sunk to 16 degrees below zero. The 2d July was the *hottest* day, whose heat was 78.2. There were times, when it rose to 91 degrees. Thunder and lightning occurred on 21 days, the earliest instance was on 12th March, and the last on 29th September. The appearance of the Aurora Borealis, or Northern Light, was much less frequent than common. June and July were very cold months; and early frost, of great severity, destroyed many hopes of the husbandman. There was rain on 72 days; and there were 19 inches of snow. The wind was North, prevailingly so, on 31 days, North-West 82, West 6, South-West 72, South 8, South-East 6, East 6, Northeast on 34 days. The days of the year were 185 fair, and 180 were, mainly, cloudy. For the *first* time in America, the Cholera Asphyxia made its appearance in several cities of the United States, having commenced its ravages in the British Canadas. Massachusetts, almost entirely, was preserved from this destroyer, whose cause and action seem yet to be little understood.

Testis Temporum.

Medfield, Mass. 1st Jan. 1833.

Chr. Reg.

Cabinets of Natural History.

It is gratifying to learn that schools and individuals in various parts of the country have already commenced operations for providing our villages with cabinets of Natural and Artificial productions. As one specimen among many we have received in proof of progress in this enterprise, we give an extract from a letter from Wenham, in this state. We hope that this, and all our other correspondents, will operate and co-operate in this national enterprise.

Wenham, Dec. 31, 1832.

Mr. Holbrook.—Your ever welcome paper, the Family Lyceum, induces me to drop you a line. In collecting a cabinet of minerals, agreeably to your recommendation, I have found one kind of stone in this town, a specimen of which I will send you by the first opportunity. It answers very nearly to the description of *polier*, or polishing-stone, given in Gregory's Dictionary of the Arts and Sciences, under the head of clay genus, eleventh species. It is of a yellowish gray color; found in masses of various shapes and sizes; adheres to the tongue; feels fine; is easily broken, and is nearly swimming. I have tried it, after being properly prepared, for cleansing pewter, brass, and silver. It answers the purpose well, leaving a bright smooth polish. There may be an abundance of it in the country, and if not, it is a pleasing fact that there is some found. Yours, E. P. S.

Fuel.

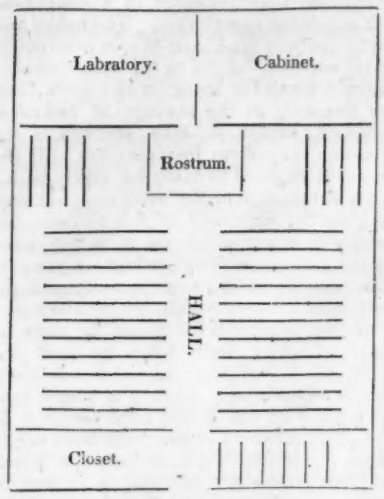
We predicted in the fall, that coal would be six dollars a ton in March next. It is now $6,50 in New-York, and a drug at that. The market is already glutted, and is constantly accumulating with new arrivals.

Family Apparatus.

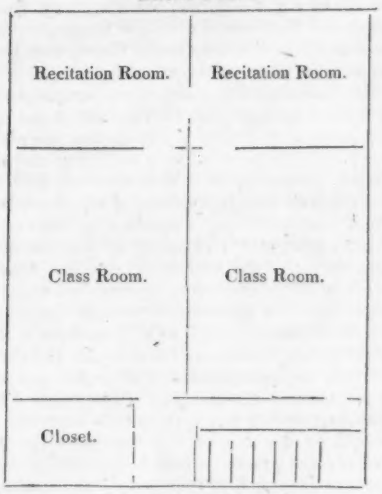
A correspondent says that the expense of a set of Family Apparatus has been saved in crockery and other articles which his children would have destroyed, except for the 'Intellectual Toys.' He adds that it not only enables parents to teach children, but children to teach parents, and of course, to make both happy.

VILLAGE LYCEUM.

First Floor.



Second Floor..



TO EDITORS.

No one doubts the power of a free Press, nor, when properly used, of its immense value to a free people. Every one will acknowledge that no subject better deserves its aid than *Common Education*—the *Universal Diffusion of Knowledge*. Every one will allow the importance of the American press lending its power to American Education. Every enlightened editor in the Union will esteem it a privilege no less than a duty, to unite in any feasible measure to advance this great, and common, and *republican* object. The only question must be, in what measure, for the promotion of this national object, can the American press unite and concentrate its efforts.

In answer to that question, we take the liberty to suggest the erection of *Lyceum Buildings*, as one of fundamental importance, and both feasible and easy to carry into effect. No one will doubt for a moment, the importance of having in every town and village throughout the Union, a commodious place of intellectual and social resort, for both sexes, and all classes and ages; where shall be deposited books, apparatus, collections of natural and artificial productions, aided by lectures, discussions, study, and other exercises for instruction and entertainment. It is too evident to be denied by any one, that such accommodations and such exercises would advance the wealth, no less than the intellectual and moral prosperity of any community which should procure them.

Nor will any one say that it is beyond the reach or the means of the citizens even of a small town, to provide such a place of resort, for their mutual and general benefit.—Ten or fifteen hundred dollars, and that either in money or work, would be sufficient to procure this object, in a large majority of cases; and where is the town or village, which could not raise that sum for a much less important object?

We are satisfied that this object only needs to be understood, to be appreciated. Many towns have already erected Lyceums,though for the want of some plan to aid them, they are generally defective. If the subject should be brought to the consideration of the community generally, it cannot be doubted that more and better buildings would be the result.

Now, who can present this subject to the American public generally, but Editors?—And what editor will doubt, that if he, with fifty others in the different states, should unite in presenting, explaining, and otherwise aiding the friends of knowledge in procuring this great national object, the success of their efforts?

One important step in effecting this object is, to present a plan for a building. This has already been done to some extent. And it is believed that any editor might, by the use of rules, give the plan of a building in such a way as to aid those of their readers who might be interested in the subject.

In more than one instance we have used a cut or stereotype plate. We here present the same plan by the use of rules, which, though less complete, answers every purpose. And we beg leave to invite the attention of those who may be interested in this subject, to some views and explanations of it, in the fourth, ninth, and fifteenth numbers of our paper, together with the extra number, recently issued.

Whether our brother editors agree with us or not in the great importance of this object, suggested for *united effort*, we know they will pardon us for the liberty we have taken in presenting it for their consideration. And we also confidently believe, that if some fifty or an hundred journals in different parts of the country should simultaneously and unitedly give this or any other measure for the promotion of education their hearty efforts, they would confer a blessing upon our country, which would deserve and ensure the gratitude of posterity.

Lyceum Buildings.

The advantages of having commodious Lyceums erected in all the towns and villages throughout the Union, would be almost innumerable. The following are a few of the leading ones

1. They would give permanency to the associations, which should erect or otherwise procure them.

2. They would naturally, and almost necessarily collect libraries, cabinets of natural history, apparatus, and other means for rendering the exercises of Lyceums interesting and useful.

3. They would furnish places of intellectual and social resort for persons of all classes and ages, especially for young people.

4. They would improve the character of schools, by furnishing accommodations and inducements for teachers and their oldest pupils to meet each other for mutual improvement.

5. They would render Maternal associations, or Mothers' Lyceums, and Ladies' Lyceums, more numerous and more useful, by furnishing the means, such as books, collections of natural and artificial productions, family and other apparatus, for making their meetings and their instructions at home more interesting and profitable.

6. They would furnish the means to farmers and mechanics to hold meetings for mutual improvement in their pursuits.

7. They would enable Lyceums in different parts of the country to establish and carry on a system of exchanges in minerals and other specimens, to furnish their cabinets.

8. They would answer all the purposes of Town Houses.

9. They would furnish all the accommodations for high schools or common schools.

10. They would furnish convenient places for sabbath schools to deposit their books, hold their meetings, &c.

11. They would furnish commodious places for religious worship where churches are not erected.

12. They would cultivate an acquaintance, with social and generous feelings, among those who should meet at them.

13. They would enable circuit teachers to render their instructions ten-fold more valuable, by providing for them places of meeting, apparatus, specimens, books, &c.

14. They would prevent intemperance, by taking the place of taverns for the social meetings of young people, and placing before them books, apparatus, specimens of our Creator's works, instead of decanters, glasses, brandy, gin, rum, and other poisons formed by man.

15. They would lead those who resorted to them, to contemplate the character of God, by placing before them specimens of his works, and illustrations of his laws, in their variety, richness, and grandeur.

16. They would open new sources of industry, by leading to new discoveries in mineral and other productions.

17. They would diminish the current expenses of the towns where they are established, by substituting cheap, as well as intellectual amusements, instead of those which are both expensive and dissipating to the mind.

18. They would have a tendency to cement our Republican Union, by diffusing knowledge, instituting exchanges of kindly feelings,and thus raising the intellectual and moral character of our nation.

19. They would virtually constitute a National University, by which a *national*, as well as an enlightened education, might be procured.

20. They would pay at least one hundred per cent. interest in gold and silver, and a thousand times that in intellectual and moral wealth.

LYCEUMS.

Michigan Lyceum.

Gov. Cass, H. R. Schoolcraft, and other public spirited men in Michigan, procured the organization of a Lyceum for that Territory, two or three years since. Town and Village Lyceums are now established in many places, as auxiliaries to the State Lyceum.

County Lyceums.

The Lyceums in the county of Penobscot, Maine, are about entering into an investigation of the subject of Lumber, which is an important article of commerce in that and other counties in Maine.

Ladies' Lyceums.

The Charlestown Ladies' Lyceum is in a prosperous condition, as are many others in different parts of the country.

Mothers' Lyceums.

Maternal Associations, or Mothers' Lyceums, are increasing in number, and spirit, and usefulness.

Lyceum Seminaries.

The friends of Education in Utica, N. York, have prepared a memorial to be presented to Congress, for aid in establishing self-supporting schools in all parts of the Union.

Seminaries upon this plan are becoming numerous and popular at the south.

Franklin Institute, N. Haven.

James Brewster, of New Haven, Conn., has made liberal provisions for an institution of the nature of a Lyceum, connected with a public house in that city. The exercises for the present season were commenced, a few weeks since, by an address from Professor Olmsted, of Yale College, which is distinguished for sound sense, practical applications, and beauty of style. It is truly a Lyceum lecture, and worthy of study and imitation by every friend of popular education. Professor O. has been long known for his interest and his *successful efforts* in the cause of *common* as well as a collegiate education. He first laid open the mineral resources of North Carolina, has prepared a valuable work on Natural Philosophy, and by many other means advanced popular knowledge.

Parley's History.

The numerous young friends of Peter Parley will be glad to learn that he has prepared for them a 'Second Book of History.' The first book has so much delighted its numerous readers that it must lead them to read the second book as soon as they can procure it: especially when they are informed that the one is equally interesting and instructive as the other.

This book is published by Messrs. Carter, Hendee & Co. of Boston, who furnish an inexhaustible source of useful and entertaining knowledge to children in all parts of the country.

Poverty and Crime.

The legal and charitable provisions made annually for the poor in London, amounts to 4,314,000

The amount of property taken by thieves, counterfeiters, &c., in the same place, for the same time, is 9,450,000

Total, 13,764,000

The incidental and contingent expenses of poverty and crime, such as the waste of time, ardent spirits, and other causes of both, the expenses of legislation, courts, prisons, locks, bars, bolts, and other means for punishing crime, and guarding against it, will undoubtedly amount to as much more; so that the annual expense of poverty and crime in one city for one year, must amount to nearly thirty millions of dollars; a sufficient sum to provide much intellectual and moral instruction for a great portion of the children upon the globe.

Doing Good.

Blacksmiths possess strong arms by exercising their arms. Musicians procure good voices by exercising their voices. Orators, philosophers, and statesmen procure strong intellects by exercising their intellects. Philanthropists possess large benevolence to their fellow-men by exercising their benevolent feelings. But last, and more important than all the rest, children obtain kind and generous hearts by exercising their hearts—by *doing good*—by kind acts to each other—by contributing to the distressed—by doing something for benighted Africa—by sending the Bible to the heathen.

COMPARATIVE METEOROLOGICAL DIARIES,

FOR DECEMBER, 1832.

Observations taken at 8 A. M.; 2 and 6 P. M.

Date.	Av'ge.	Winds.	Weather, &c.
1	70	SW	Little hazy.
2	68	SE NE	Cloudy and cold.
3	64	NW	Rain day & night
4	53	SW WNW	Clear and cool.
5	47	NNW NNE NE	Cloudy and rain.
6	55	NNE NE NW	Clear and cool,
7	63	NNE SE	Cloudy. Clear.
8	68	SE	Heavy rain.
9	62	NW W	Broken Clouds.
10	58	NW NE	Do. and rain.
11	60	SW	Do. Rain, night.
12	58	SW	Clear and pls'nt.
13	59	SW SE	Clear and cloudy
14	63	SSE	Cloudy. Rain.
15	59	WSW	Hazy all day.
16	53	SW	Cloudy all day.
17	53	SW NW	Clear all day.
18	53	NW	Clear all day.
19	51	NW	Clear all day.
20	45	NW W	Clear all day.
21	39	NW W	Clear. Hazy.
22	36	NW NE	Cloudy. Rain.
23	40	NW	Sleet and rain.
24	41	NW NE	Cloudy. Rain.
25	52	ENE SE	Cloudy. Rain.
26	65	SE	Heavy rain.
27	69	SE SW	Rain last night.
28	59	SE NE	Cloudy all day.
29	55	NW NE	Clear. Cloudy.
30	51	NE	Broken Clouds.
31	61	NE ENE	Clear. Cloudy

REMARKS.

1. These Observations have been made three times a day, viz.: at 8 A. M., 2 and 6 P. M. 2. The mean of the thermometer during the month, 54°, 10° colder than November. Max. 70° on the 1st, Min. 36° on the 22d. 3. Ther. Ex. at 8 A. M., Max. 68° on the 2d and 27th, Min. 30° on the 22d. Mean 51°. 4. Ther. Ex. at 2 P. M. Max. 72 on the 1st and 27th, Min. 40 on the 22d, Mean 60. 5. Ther. Ex. at 6 P. M., Max. 72 on the 1st, Min. 38 on the 22d, Mean 57. 6. There have been 10 rains during the month, viz.: on the 3d, 5th, 8th, 10th, 14th, 22d, 23d, 24th, 25th, and 27th. On the evening of the 23d there was sleet, and back in the country a slight fall of snow. 7. Winds. SW 6 days, NW and W 12 days, NE and E 5 days, SE 8 days. There have been decidedly clear only 7 days, cloudy 14, variable 10. We have had an unusual number of cloudy days this month, and less NE winds than is usual. 8. The following were the aspects of the planets, viz.: Mercury at greatest eastern elongation 7th, stationary 15th, at inferior conjunction 24th. Mars stationary 25th. Ceres do. 24th. Jupiter in quadrature 11th. Saturn do. 19th. 9. Uninterrupted health is continued in our borders. We have been peculiarly favored through another year; no prevailing epidemic has been permitted to visit us. In return for this distinguished goodness, it becomes us to render devout thanks to the Giver of all good.

Chatham Academy, *Charleston, S.C.* 1833. W. H. W.

METEOROLOGY OF CONCORD.

Lat. 43 deg. 12 min.

Date.	Average.	Winds.	Weather.
1	26	NE	Snow.
2	18	NW	Fair.
3	28	NW	Cly. s'w. rn.
4	37	WNW	Cloudy, fair.
5	17	NW	Fair.
6	20	NW	Cloudy.
7	30	NW	Fair.
8	39	SW	Cloudy.
9	41	NW	Cloudy.
10	35	NW	Cloudy, fair.
11	31	NW W	Fair.
12	32	NE	Cloudy.
13	23	E SE	Cloudy.
14	26	NW NE	Cloudy.
15	27	NE	Cloudy.
16	23	NE	Fair. Cl.
17	31	NE	Snow, rain.
18	34	NW	Cl. r'n. f'r.
19	28	NW	Fair.
20	22	NW	Snow, fair.
21	14	NW	Cloudy,fair.
22	13	NW	Fair.
23	13	NW	Fair.
24	15	NW S	Cloudy,fair
25	28	NW	Fair.
26	27	NW	Fair, cl.
27	26	NW SW	Snow, rain
28	23	NW	Cl. fair.
29	19	NW	Fair.
30	12	NW	Fair.
31	31	NW S	Fair.

Warmest day, 9th.—Coldest, 30th. Highest degree, 46—Lowest, 7 below 0. Mean temperature for the month, 26 deg. Prevailing wind, N. W.

December 31st, 1832. [*N. H. Courier.*

The Weather.

Science has not yet advanced so far as hardly to enable the greatest philosopher to conjecture the cause of the most singular contrast between the weather this season and last. If a system of comparative meteorology was so extended as to take a view of the weather upon the whole earth at the same time, aid would be given to this difficult but interesting subject.

BOOK OF NATURE.

INSECTS.

The eyes of insects are admirably adapted for seeing minute objects nigh at hand, but from the smallness and convexity of their lenses, it is apparent that they can neither see far, nor take in the larger objects, and to remedy any inconvenience that might arise from this, may have been the principal reason why nature has furnished them with those projecting horns or feelers with which they seem to grope as they advance. Insects are also distinguished by the number of their legs and wings; of the latter most insects have four wings, while no other species of animals have more than two; and although the greater part have six legs, others, as Mites and Spiders, have eight, and some ten, fourteen, sixteen, and even a great many more. The palpi are those little instruments fixed to the mouth of some insects, which seem to be intended to serve the purpose of arms, for they employ them to bring food to their mouths, and to keep it steady when eating. Some insects are furnished with stings for defence, or to assist them in procuring their food, others with a tube for injecting their eggs into the most convenient situations for hatching. The females of some winged insects, for instance, insert their eggs under the surface of leaves, and the worms when hatched, give rise to those tubercles or galls with which the leaves of the ash, the fir, and other trees sometimes abound; the eggs of the Cynips, inserted into the leaves of the oak, produce the caterpillars, which give rise to the galls used in the composition of ink. The greater part of winged insects have a proboscis or trunk, which, although not so large, is as wonderfully contrived as that of the Elephant, and serves the purposes of a mouth, a nose, and a windpipe! The proboscis is a machine of a very complicated nature; and that of a butterfly, when not in quest of food, is rolled up in form of a watch spring.

The degree of strength and agility which many of the insect tribes possess is amazing. A flea will draw a chain one hundred times heavier than itself; and the velocity of a mite, in proportion to its size, is said to outstrip that of a race-horse! With regard to sex, there is one thing very remarkable in this order, viz. that the Bees, the Wasps, and Ants furnish an example of a species that belong to neither sex, and so are called *neuters;* these, however, are not without their uses; and the affection they evince for the helpless little creatures left to their care, might serve as a lesson to those who are intrusted with the tender charge of infants not their own.

The last thing we shall mention in this general survey of the insect tribes, is the wonderful transformations many of them undergo in the different stages of an egg, a grub or worm, a cyrysalis, till they arrive at their most perfect or fly state.

'Observe the insect race, ordained to keep
The lazy sabbath of a half year's sleep.
Entombed beneath the filmy web they lie,
And wait the influence of a kinder sky.
When vernal sunbeams pierce the dark retreat
The heaving tomb distends with vital heat;
The full-formed brood, impatient of their cell,
Start from their trance, and burst their silken cell.'

In each change not only their form and structure, but their very nature and appetite undergo a complete revolution.—Take, for example, yonder Butterfly, which, in gaudy attire, and with a sprightly air, roves and flutters in quest of its balmy juices from flower to flower: how wonderful the change from that dead and inanimate state in which its beauties lately lay concealed, or from the grovelling reptile which on the cabbage-leaf partook voraciously of its coarser fare, nor evinced any relish for other dainties!

If any thing were wanting to prove the wise disposition of the parts and appetites of animals to their various situations and habits, here we have it in the instance of the Butterfly, whose structure and taste both undergo an alteration when its sphere of action and propensities become different.

In regard to some peculiarities of a few of the different species of insects, we will briefly observe, that in the mouth of the Gnat we have an admirable specimen of the instrument necessary for such a blood-thirsty animal; the nails or crotchets of the Horse-fly, as well as its tenacity of life, evince that it is apt to be disturbed in its *banquets;* whoever attentively considers the form of a Louse, need not be told that it is a blood-sucker. The legs of the Locust and of the Grasshopper at once shew their propensity to leaping. The Bee, in danger of being robbed of its precious stores, is armed with its well known weapon. The female wasp is larger and stronger than the male, to enable her to survive the rigor of winter; and the strong hairy legs of the Ant are no less well contrived to assist her in the indefatigable labors of the hill, than the two claws with which they are armed for the purpose of climbing.

How surprising the instinct by which those little creatures are taught uniformly to deposit their eggs on such animal or vegetable substances, as furnish a proper and plentiful supply of food for the worms or caterpillars, as soon as they are hatched. That those who pass into the chrysalis or inactive state, select the most proper situation and modes of concealment; and that others, whose only metamorphosis consists in the addition of wings, surround themseves while undergoing the change by an envelope of spume or froth, proceeding from their body; as the Cuckoo spit, or Froth Worm.

'The Locusts have no king, yet they go forth all of them in bands;' while the solitary spider, having no wings to go in pursuit of her prey, weaveth to herself a web, and watches with patience the entanglement of a fly.—Our space will not permit us to dwell on the geometrical precision and mathematical exactness with which Bees form their combs; the wonderful ingenuity and contrivance of the Wasp's nest, or the order and regularity observed in the construction of the Ant-hill, as well as the prudence and foresight which the whole of these evince in their labors and pursuits; these, and the singular but convenient attitude which the Water-fly assumes in swimming on his back, to enable him the better to lay hold of his food, the *under* side of plants which grow on the water, we can only mention, and must proceed to consider a few of

THE USES OF INSECTS.

From the number of animals in the different elements and regions of existence, which prey upon insects, there can be no doubt but the principal object the Creator had in view in the formation of these, was for the subsistence of many of the larger orders of creatures; but the following specimens serve to show that some of these also contribute in no small degree, in their respective spheres, to the service of man. By the labors and exertions of the Bee, we are provided with stores of honey and wax; the seemingly contemptible little Silk-Worm presents us, in its passage from the Caterpillar in the sleeping state, with materials for constituting our most costly raiment.—From the Cantharis come the Spanish Flies, so useful in blisters; the Kermes is also valuable for medicinal purposes; and the Cochineal furnishes us with a rich and beautiful dye. The wonders accomplished by the united exertions of the Bees, the Wasps, and the Ants, shew what can be done by brethren dwelling together in unity. The watchfulness of the Spider after she has woven her web, demonstrates the necessity of not folding our hands for slumber just at the time we have completed our preparations for activity; and to the Ant the sluggard is sent to learn a lesson of prudence and foresight.

'These emmets, how little they are in our eyes!
We tread them to dust, and a troop of them dies
Without our regard or concern:
Yet, as wise as we are, if we went to their school,
There's many a sluggard, and many a fool,
A lesson of wisdom might learn.'

REPTILES.

'Lo, the green Serpent, from his dark abode,
Which even imagination fears to tread;
At noon forth issuing, gathers up his train
In orbs immense.'

——'Thro' subterraneous cells
Where scorching sunbeams scarce can find a way,
Earth animated heaves.—The flowery leaf
Wants not its soft inhabitants.'

In the order of Reptiles we have a new display of the wonders of creating art. These creatures are also endowed with the power of motion, but how differently do they move from any of the orders we have already considered. Deprived of the usual apparatus of legs or wings, the ponderous Serpent issues from his concealment, and moves majestically along by means of his scales and strong muscular powers; and the slender Worm draws and pushes himself forward by his rings and contortions. The wisdom in these contrivances must be immediately apparent, when we consider that some of the former have their habitations assigned them in the most impenetrable thickets, where an elevated stature would expose them to many inconveniences. Some take up their abode in the swampy banks of great rivers, or among the reeds in morasses, where the weight of their body, supported by legs, must have sunk them deeper in the mire; others wind their way among heaps of rubbish or crumbling ruins, where projecting appendages of any description would have been apt to retard their progress; and the naked and defenceless bodies of the latter are admirably adapted for those subterraneous passages which they form to themselves unseen in the bowels of the earth.

Snails are also a species of Reptiles, but being encumbered in their movements with their shelly appendages, they are furnished with an instrument peculiar to themselves, in that long broad surface by which they pull themselves along; and by which, assisted by the glutinous substance they emit from their bodies, they are enabled to adhere, in any position, to the smoothest of surfaces.

The motion of Caterpillars in their vermicular state is curiously performed, by means of a number of little legs, the foremost of which are differently constructed from the hindmost, but all are formed in the most suitable manner for assisting in their progress on the leaves of plants.

Being deprived of those instruments of motion possessed by other animals, to carry them speedily forward in pursuit of their prey, Serpents are necessitated to have recourse to the resources of artifice, and to lie in wait for it; and, to enable them to do this to the best possible advantage, nature has not only endowed them with the power of entwining themselves in ambush around the trunks and among the branches of trees, by the slender make and flexibility of their bodies, but, by a very particular and singular construction of the back-bone in Serpents they are enabled to coil themselves up in a very small compass. In the generality of animals, the joints in the back-bone do not exceed thirty or forty; but in the serpent kind they amount to 145 from the head to the vent, and twenty-five more from that to the tail. If Serpents are not furnished with the claws of the Tiger to lay hold of their prey, the strong hooked bill and talons of the Eagle to pull it to pieces, and the tusks of the Boar to devour it, several of this species are furnished with a poisonous sting for instantaneously inflicting the mortal wound, others are soon enabled to extinguish the vital spark by means of the convulsive energy of their enormous twistings; while the general conformation of the jaws, the width of the mouth, and yielding texture of the bodies of serpents are such, as to enable them to swallow prodigious mouthfuls, and animals more bulky than themselves. A Serpent in the island of Java was observed at one time to destroy and devour a Buffalo; after having broken the bones by its voluminous twistings, it was seen to lick the body all over, which covered it with its mucus, and made it slip more glibly down its throat.

But the assistance which some of these creatures receive from their poison in the seizing of their prey, is not the only benefit they derive from it; it is also their most sure and effectual defence; and from the dread and horror which such an instrument as the sting of a Serpent inspires, (although only found in the possession of a few,) it serves as it were for a safeguard to the whole species.

Mankind, indeed, cannot tread with too cautious steps the paths frequented by these creatures; for although none of the most venomous kinds will attack man except on the defensive, yet, without the power of discriminating, when accidentally trod upon, they will make the intruder feel the power of their vengeance. What a merciful provision, therefore, has Providence made, for the safety of the American in the tail of the Rattle-Snake; than which there is not one of the serpent tribe more to be dreaded: yet the rattle in its tail, on the smallest motion, must give notice of his approach, or warn the traveller of the impending danger that lies concealed in his haunts. It is a melancholy truth, that the direful effects of the Serpent's poison is not confined to the wounds they themselves inflict, but, as a celebrated naturalist observes, by men more mischievous even than Serpents, who prepare their venom to destroy each other; with this the savages poison their arrows, and prepare their revengeful poison. The ancients were known to preserve it for the purposes of suicide, and among barbarians the venom of snakes is used as a philter to this day. How much more honorable for human nature when the ingenuity of man is exerted for the preservation of his species; and as Vipers are the only animal of a venomous kind, from whose bite the inhabitants of Great Britain have any thing to fear, the discovery of William Oliver, the Viper-catcher at Bath, that the application of Olive Oil was an effectual cure for the bite of one of these animals, may not be improperly mentioned here, to the honor of that person who submitted to some dangerous experiments in corroboration of the truth of this discovery.

Nor is the care of Providence less observable in the provision made for the security and preservation of the more harmless kinds of reptiles, than for those of a dangerous and venomous description. The naked and tender body of the Earth-Worm is no doubt pretty securely lodged in the subterraneous vaults it forms for itself in the earth, and the Serpent, in the absence of defensive weapons, enjoys no little security in the dread its very form inspires; but still the former is exposed to many an injury in his lowly situation, and the latter may oft wait long for the approach of his victims; but the feeble worm when cut in several parts by the gardener's spade, evinces a remarkable tenacity of the vital powers, and the voracious Liboya, which can swallow at a meal an animal three times as thick as itself, at other times when no food presents itself, exhibits an abstemiousness that is astonishing. Indeed a single meal with many of the Snake kind seems to be the adventure of a season; and is an occurrence for which they have been for weeks, nay, sometimes for months, in patient expectation. Vipers are often kept in boxes for six or eight months, without any food whatever; and there are little Serpents sent over to Europe from Grand Cairo, that live for several years without eating.

The instinctive sagacity of an animal, said at first to be more subtile than any beast of the field, and whose wisdom was pointed out by the Saviour of men as being necessary to be united with the harmlessness of the dove in the dispositions of his disciples, must naturally be expected to be very remarkable, and it certainly is so, whether manifested in the wonderful docility which some of these creatures assume in a state of captivity—the dancing serpent, for instance, carried about by jugglers and strollers in the East Indies, will raise their heads and parts of their bodies at the sound of music, moving them in such a manner as to keep time with the instrument, while their tails continue in a coil at the bottom of the basket:—the convenient places in which they lie in wait for the approach of their prey—the commodious attitude in which those of the venomous kind put themselves for darting at their victims; or the subtile artifices to which those of the more harmless kind have recourse in eluding an enemy. Serpents the most venomous will suddenly spring up on their tail, at the approach of a larger animal, erect their head, and inflict the deadly wound in a moment; while some of those who are less so, when close pursued, or excited by rage or fear, will emit a most horrible fœtor, in order as it were to force the enemy to retire from the pursuit.

The Black Snake of Virginia lays its eggs in dunghills or hotbeds, where, aided by the heat of the sun, they are hatched and brought to maturity. The blind worms betake themselves at the approach of winter to those secret recesses, where, in a state of torpidity, they are sometimes found in vast numbers twisted together; and the common earth-worm when warned of danger from the mole, by the moving of the earth, darts upwards to the surface, and is out of his reach in an instant.

QUESTIONS ON LYCEUM No. 23.

In what was Alfred the Great distinguished, except in war?

What were his virtues as a king?

From what sources did he collect his code of laws?

Was he lax or rigid in the execution of his laws?

Were the laws themselves mild or severe?

Was Alfred austere or affable in his manners?

Did his subjects obey him most from love or fear?

What literary institution did Alfred establish?

What other methods did he take to raise the literary character of England?

How long did he reign, and when did he die?

How long ago was the discovery made that blood circulates through the animal system?

What organ in the body is the common receptacle for the blood from all parts of the system?

From which part of the heart does the aorta proceed?

What are the principal blood-vessels in the animal system?

Which vessels bring the blood into the heart, the veins or arteries, and which carry it from the heart?

How many kinds of attraction are recognized by philosophers in producing the changes and operations of nature?

Which kind of attraction causes bodies to fall to the earth? Also, the moon and earth to revolve?

Which gives strength to iron, and makes it stronger than lead?

On which is the construction of the mariner's compass founded? On which the construction of lightning-rods?

Which kind of attraction produces most of the internal changes in bodies, and gives them their properties and uses in the arts?

Is it the design of our Creator that the mind should think and act for itself, or that it should be inactive and servile?

Which is most unnatural in man, a taste for knowledge, or the want of taste?

Can any natural obstacle be presented to the universal spread of knowledge?